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IN THE  
**Supreme Court of the United States**  
October Term, 1979

**No. 79-136**

SIDNEY A. DIAMOND, Commissioner of  
Patents and Trademarks,  
*Petitioner,*  
*vs.*

ANANDA M. CHAKRABARTY,  
*Respondent.*

**On Writ of Certiorari to the United States  
Court of Customs and Patent Appeals**

**BRIEF ON BEHALF OF THE AMERICAN PATENT  
LAW ASSOCIATION, INC., *AMICUS CURIAE***

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**BRIEF ON BEHALF OF THE AMERICAN PATENT  
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**I.**

**Question Presented**

Whether a man-made microorganism, having unique and useful properties which do not exist in nature, fails to constitute a composition of matter or manufacture under 35 USC §101 solely because the entity also demonstrates the characteristics of life.

## II.

### Identity of *Amicus*

The American Patent Law Association, Inc. (herein the "Association") is a professional association of over 4,000 lawyers throughout the United States interested in the laws relating to patents, trademarks, copyrights, and unfair competition. Its members constitute approximately half the practicing patent lawyers in the country, from private, corporate, and governmental practice. One of the objects stated in the Association's Articles of Incorporation is to aid the courts in the proper interpretation of the laws relating to patents, trademarks, copyrights and unfair competition.

The consent of the parties' counsel to the filing of this brief has been obtained and will be separately filed with the Court.

## III.

### Interest of *Amicus*

The Association has no concern with, and expresses no views on, the private interests of the respondent in this appeal. The Association has a strong and continuing interest in the administration of the patent laws and seeks to provide aid to this Court in reaching an interpretation of the patent statutes which will further the public interest expressed in article I, section 8, clauses 8 and 18, of the Constitution which, in pertinent part, reads:

The Congress shall have Power . . . (8) To promote the Progress of Science and useful Arts, by securing

for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries; . . . And (18) To make all Laws which shall be necessary and proper for carrying into Execution the foregoing Powers . . .<sup>1</sup>

## IV.

### Statute Construed

35 USC §101 provides:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

## V.

### The Position of the Association as *Amicus Curiae*

This case presents an important question with respect to the nature of things which may receive patent protection under the Patent Statutes. The question must be resolved in a manner consistent with firmly established and basic principles of law and in the public interest.

Respondent's invention is in the field of science variously referred to as genetic engineering or molecular biology, an evolving technology which has made remarkable advances during the past decade.

1. U.S. CONST. art. I, §8, cls. 8 and 18.



Recently, the synthesis of the mammalian hormone insulin, a complex protein, by a strain of genetically modified bacteria was reported,<sup>2</sup> thereby promising a plentiful and inexpensive source of this substance, indispensable to diabetics but heretofore available only from animals. The next ten years are expected to bring even more startling advances. It was recently announced that the antiviral substance "interferon", a substance known for over twenty years but heretofore available in such minute quantities as to preclude widespread use, has been produced by genetically modified bacteria.<sup>3</sup> Another recent *New York Times* article<sup>4</sup> quoted one scientist as seeing industrial applications of molecular biology "far beyond medical practice and drug innovation", with research teams "working on projects aimed at such diverse applications as energy, industrial chemical production, agriculture and even forest products". Indeed, respondent's invention is directed at the degradation of oil in oil spills.

This new technology, science or art by which man can create new entities which never existed in nature holds vast promise for all of mankind. *Amicus'* concern is thus not whether the present respondent should have a patent, but whether 35 USC §101 should be construed so that "progress" in a new and vastly useful art will be "promoted", in accordance with the Constitutional authority under which the statute was enacted.

2. Wall Street Journal, Sept. 7, 1978, at 16. No strain of bacteria found in nature is known to produce insulin.

3. N. Y. Times, Jan. 17, 1980, at 1, col. 1.

4. Schmeck, "Molecular Biology Takes Over Where Evolution Left Off", N. Y. Times, Dec. 30, 1979, §DX at 9, col. 1.

## VI.

### Summary of Argument

The court below, without question the only appellate court in this country involved on a virtually day-to-day basis in the construction and application of the patent statutes, has twice construed 35 USC §101 with respect to respondent's invention. The second holding, the case now before this Court, was made only after thorough reconsideration in view of this Court's opinion in *Parker v. Flook*, 437 U.S. 584 (1978), and an exhaustive evaluation of each argument advanced by petitioner.

Petitioner sees in the depth of that reconsideration by the lower court some sort of defiance and urges, largely on the basis of *in terrorem* pleas in the name of public safety, philosophic controversy and invocation of "monopoly" charges, that the holding of the Court of Customs and Patent Appeals was in error.

The arguments which follow are offered in the belief that petitioner is in error in its position. *Amicus* submits that the evaluation of whether 35 USC §101 is satisfied by a particular entity under consideration does not involve a determination of whether "aliveness" can be found in that particular entity. To hold that it does will read into the statute a limitation that cannot be found in the language of the statute, and no convincing evidence has been advanced to demonstrate that Congress intended such limitation.

Secondly, it is the position of *amicus* that this case does not involve an extension of patent rights; 35 USC §101 was drafted by Congress to apply to new technologies, almost by definition unforeseeable. Further, §101 has been correctly applied by the Patent and Trademark Office to permit patenting of processes utilizing microorganisms. It is inconsistent and illogical to exclude the novel and operative entity itself from the category of things which may be the subject of patents.

Thirdly, *amicus* urges that the lower court's holding is fully consistent with and follows this Court's view that laws of nature, abstract concepts, and scientific truths are not patentable.

Finally, *amicus* urges that the Plant Patent Statute of 1930 is an insufficient basis for defining Congressional intent in 1874, and that the *in terrorem* arguments of petitioner are misleading and beside the point.

The President of the United States, in a recent message to Congress,<sup>5</sup> acknowledged that innovation in this country is badly in need of stimulation, and outlined a program intended to correct this national concern. Two of the nine critical areas addressed by the President were those of Enhancing the Transfer of Information and Strengthening the Patent System. It is the Association's view that if petitioner succeeds, the President's programs will receive a serious setback, and secrecy will be encouraged. Such a result is not in the public interest.

5. President's Message to Congress of the United States, 15 Weekly Comp. Of Pres. Doc. 2069 (Oct. 31, 1979).

## VII. ARGUMENT

### A. The determination of whether 35 USC §101 is satisfied does not involve "aliveness".

Petitioner has stated that the "Question Presented" to this Court is "Whether a living organism is patentable subject matter under 35 USC §101".<sup>6</sup>

Framed in this manner, the question tends to evoke an almost reflexive negative response. The reason for this response lies, however, not in an express or even identifiable legislative exception to the objective of article I, section 8 of the Constitution to "promote the useful Arts". Rather, the response is evoked by a common belief that any and all things which exhibit the characteristics of life are, and of necessity exclusively must be, phenomena of nature. Until the last decade, all "living organisms" were, in fact, phenomena of nature.

Since phenomena of nature are not patentable, *Gottschalk v. Benson*, 409 U.S. 63 (1972), one tends almost subconsciously to complete the syllogism by concluding that if products of nature are not patentable and living organisms are products of nature, living organisms are not patentable.

Insofar as the patent law is concerned, however, the patent-defeating characteristic of a phenomenon of nature is not its "aliveness". It is, rather, its prior existence without the intervention of man. *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127 (1948). A chemical compound, for example, which is produced in nature has been held to be unpatentable. *Cochrane v. Badische Anilin Soda Fabrik*, 111 U.S. 293 (1864). That chemical compound,

6. Brief for Petitioner at 3.

however, was never "alive". The bar to its patentability, and for any phenomenon or product of nature, involves nothing more than a lack of novelty. In *Funk*, this Court stated:

For patents cannot issue for the discovery of the phenomena of nature. See *Le Roy v. Tatham*, 14 How. 156, 175. The qualities of these bacteria, like the heat of the sun, electricity, or the qualities of metals, are part of the storehouse of knowledge of all men. They are manifestations of laws of nature, free to all men and reserved exclusively to none. He who discovers a hitherto unknown phenomenon of nature has no claim to a monopoly of it which the law recognizes. If there is to be invention from such a discovery it must come from the application of the law of nature to a new and useful end.<sup>7</sup>

Today, however, "things alive" cannot be equated automatically and invariably to "products of nature". Today, the technology or art of genetic engineering is producing "things alive" which are made by man, not by nature. While these creations demonstrate the properties of "aliveness", they are not products of nature. They are products of man, products which serve the new and useful ends to which the court referred in *Funk*.

The new and useful ends served by respondent's invention were achieved by man. Respondent did not discover a phenomenon of nature but *created* a phenomenon which does not exist in nature.

7. *Funk Bros.*, *supra*, 333 U.S. at 130.

Similarly, the recently announced synthesis of an entity capable of producing insulin can under no stretch of the imagination be characterized as a mere discovery of a phenomenon of nature. No strains of bacteria, as "created" by nature and which have always existed, are known to produce insulin. That new and useful capability was achieved by man, by successfully splicing genetic material into the existing genetic material of the bacteria, producing a new phenomenon, a product of man, not a product of nature. Significantly, the extrinsic material inserted into the cell was chemically synthesized in a laboratory by man; it was not "naturally" produced. A microorganism capable of producing insulin is not a "product of nature" since, in nature, microorganisms are not known to produce insulin.

Petitioner would, however, seek to preemptively deny patentability through judicial insertion into the statute of the admittedly emotional but totally irrelevant term "life".

Numerous judicial bodies have grappled in other contexts with the immense problem of simply defining "life". The moral and ethical implications inherent in those situations, where a legal definition of life carries with it a legal definition of death, are not present here. There is only the express objective of promoting useful arts in article I, section 8 of the Constitution, and the absence in the patent statute of any prohibition against "living" inventions.

Petitioner's attempt to interpret §101 by judicial insertion of an exclusion based solely on some life or "vital force" factor, moreover, ignores the fact that Congress already has provided statutory tests, novelty under 35 USC



§102 and unobviousness under 35 USC §103, by which patent protection for true products of nature can be precluded, be they “alive” or “dead”. Living organisms produced by nature cannot be protected by issuance of a patent if these express statutory tests are not satisfied. *Amicus* would thus note that finding subject matter to fall within the categories of 35 USC §101 does not mean that subject matter is *per se* patentable, i.e., that a patent will necessarily issue. The right to a patent under §101 of Title 35 is expressly “subject to the conditions and requirements of [Title 35]”.<sup>8</sup>

The lower court did not and could not pass on whether or not respondent had made a “patentable” invention or disclosed a “patentable” invention in respondent’s application when measured by these express statutory tests. Petitioner raised no issue before the lower court concerning the novelty of the invention under the detailed requirements of 35 USC §102, its nonobviousness under 35 USC §103, or the adequacy of the application’s disclosure under 35 USC §112. The lower court was required to consider the cases on the assumption that respondent had been found to be in compliance with each of these statutory requirements. The court below thus characterized the sole issue, as placed before it by respondent, as to whether an invention otherwise patentable under the statute is excluded from the categories of patentable subject matter set forth in §101 simply because it is alive.

*Amicus* takes no position on the eventual patentability of respondent’s invention under the existing and express

8. 35 USC §101.

statutory requirements of 35 USC §§101, 102, 103 and 112. By the language utilized in all of those sections, Congress, “. . . making all laws which shall be necessary and proper . . .”,<sup>9</sup> has clearly delineated *all* the conditions of patentability. A new and highly useful technology should not be denied the right to demonstrate satisfaction of those express conditions through introduction of a term not appearing in the statute.

The position expressed in the Petition to this Court glosses over the statutory language by which Congress expressly set forth the conditions of patentability, and emphasized instead “living”, a condition which is not in the statute:

Living things—whether *naturally occurring, isolated, or genetically engineered*—are no more “discoveries” of the kind the statute was enacted to protect than are the mathematical principles involved in *Flook*. [emphasis added.]<sup>10</sup>

By grouping “genetically engineered” with “naturally occurring” petitioner would cast upon genetically engineered subject matter, an article of manufacture, the shadow of unpatentability associated with naturally occurring subject matter, true products of nature. The unpatentability of naturally occurring subject matter, however, as already noted, is a consequence of 35 USC §102, not 35 USC §101. Something “naturally occurring” is not patentable simply and solely because of a lack of novelty.

9. U.S. CONST. art I, §8, cl. 18.

10. Petition for Writ of Certiorari at 439 BNA, Pat. T.M. Copyr. J., D-1, D-4 (August 2, 1979).

Certainly Congress did not intend naturally occurring subject matter, something which always existed, to be patentable. That is one of the express purposes of §102.

If patentability is to be foreclosed, without any inquiry into utility, novelty or unobviousness, solely on the grounds that a manufactured entity is "alive", it necessarily follows as a corollary that only inanimate entities can achieve patentability under the law as it now stands. The characteristics upon which this distinction is made would appear to be irrelevant to the ultimate objective of the Constitution and the patent statutes enacted thereunder. Animate objects are generally distinguished from inanimate objects on the basis of metabolism, growth, reaction to stimuli and reproduction. It is precisely because these characteristics can be retained while at the same time new results are obtained that genetically engineered organisms represent such progress in the art. In the case of respondent's invention, for example, it might be theoretically possible to harvest from separate microorganisms the individual enzymes responsible for the different degradative pathways and to formulate an inanimate composition which would perform, at least temporarily, the same conversions which the claimed entity achieves. Not being alive, such a hypothetical composition could qualify under 35 USC §101 under petitioner's test (whether it would qualify under §§102 and 103 are, as has been noted, separate questions). The same might also be possible by simply "killing" respondent's new microorganism. While these hypothetical "manufactures" would be performing the same metabolic conversion, albeit without the benefit of a "vital life force", they would do so only momentarily and without the advan-

tage of reproduction and regeneration designed into the entity. To require a useful manufacture to be made essentially useless in order to qualify as patentable subject matter would reduce the law to an absurdity.

**B. This case does not involve an extension of patent rights.**

In *Parker v. Flook*, *supra*, this Court noted that "[W]e must proceed cautiously when we are asked to extend patent rights into areas wholly unforeseen by Congress",<sup>11</sup> quoting a passage from the opinion of Mr. Justice White for the majority in *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 531 (1972) which stated:

We would require a clear and certain signal from Congress before approving the position of a litigant who, as respondent here, argued that the beachhead of privilege is wider, and the area of public use narrower, than the courts had previously thought. No such signal legitimizes respondent's position in this litigation.

In the portion of the paragraph in *Deepsouth* which just precedes the passage quoted above, the Court stated:

It follows that we should not expand patent rights by *overruling or modifying our prior cases* construing the patent statutes, unless the argument for expansion of privilege is based on more than mere inference from ambiguous statutory language. (emphasis added.)<sup>12</sup>

As recognized correctly by the court below, the present case does not present a litigant urging a construction of 35

11. 437 U.S. at 596.

12. 406 U.S. at 531.

USC §101 which is at odds with established precedent. Rather, this is a case of first impression. Since the Court is not being asked to make a change in existing law or to overrule or modify any case or to expand any rights given by Congress, there is no need for a signal from that body.

What is involved here is not an expansion of patent rights. Respondent's patent rights would be identical to those of any other patentee. What is involved is an expansion of science and technology, the very progress envisioned by the Constitution. Petitioner's attempt to preclude patentability to such scientific and technological progress seems singularly incongruous with the objectives set forth in the Constitution.

It is not necessary that Congress must foresee each new field of technology or useful art to bring it within §101. As the Court stated in *Barr v. United States*, 324 U.S. 83, 90 (1945),

... if Congress has made a choice of language which fairly brings a given situation within a statute, it is unimportant that the particular application may not have been contemplated by the legislators. *Puerto Rico v. Shell Co.*, 302 U.S. 253, 257, *Browder v. United States*, 312 U.S. 335, 339, and cases cited.

Clearly, the language which Congress chose to use in §101 brings respondent's invention within the statute. As the court below noted:

To insist on specific Congressional foresight in construing §101 would be the very antithesis of the Constitutional and Congressional purpose of stimulating the

creation of new technologies—by their very nature unforeseeable—and their progressive development. This has been clear since *Kendall v. Winsor*, 62 U.S. 322, 328 (1859) wherein the Supreme Court said:

The true policy and ends of the patent laws enacted under this Government are disclosed in . . . article [I] of the Constitution, the source of all these laws, viz: "to promote the progress of science and the useful arts," *contemplating and necessarily implying their extension and increasing adaption* to the uses of society. [emphasis ours.]<sup>13</sup>

Except for the substitution of the word "process" for the word "art", the language appearing in 35 USC §101 has been the same ever since the Patent Act of 1793. The terms "manufacture" and "composition of matter" are first found in the Patent Act of 1793. In all the time since then, those words have been liberally construed to include the most diverse range of unforeseen technological developments imaginable—telephones, radios, television, automobiles, radar, lasers, antibiotics, microcalculators, atomic energy, polio vaccines, and pacemakers. The list is endless and beyond recitation. Neither the Founding Fathers nor the Congresses which drafted the patent statutes could have foreseen the innumerable subsequent innovations.

What was foreseen was not the specific scientific and technical areas in which progress would be made but the fact that progress itself would be made and should be encouraged.

13. *Application of Bergy, Coats, and Malik; Application of Chakrabarty*, 596 F.2d 952, 973 (C.C.P.A. 1979).



**C. The lower court's holding is fully consistent with and follows this Court's view that laws of nature, abstract concepts, and scientific truths are not patentable.**

It is beyond dispute that intangible laws of nature, scientific principles and mathematical equations are outside the ambit of patentability. *Parker v. Flook, supra*. The underlying notion was stated by the Court in *Flook* to be that "[A] scientific principle . . . reveals a relationship that has always existed."<sup>14</sup> Quoting from Rosenberg,<sup>15</sup> the Court noted:

The reason is founded upon the proposition that in granting patent rights, the public must not be deprived of any rights that it therefore freely enjoyed.<sup>16</sup>

The patentability of the respondent's invention in no way conflicts with this principle since it never existed until the respondent made it. The public, as a result of the respondent's industry, now can enjoy the fruits of that labor but the public had *nothing* to enjoy, freely or otherwise, prior thereto.

The holding of *Parker v. Flook, supra*, that laws of nature, abstract concepts and scientific truths are not patentable is essentially a reaffirmation of principles approved by this Court in earlier cases. In *Mackay Radio and Telegraph Co. v. Radio Corporation of America*, 306 U.S. 86 (1939), involving the patentability of a directional antenna

14. 437 U.S. at 593, n.15.

15. P. Rosenberg, Patent Law Fundamentals §4, at 13 (1975).

16. 437 U.S. at 593, n.15.

system in which the wire arrangement was determined by the logical application of a mathematical formula, it was stated:

While a scientific truth, or the mathematical expression of it, is not patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be.<sup>17</sup>

In *Funk Bros. Seed Co. v. Kalo Inoculant Co., supra*, this Court held claims to a physical combination of mutually noninhibitive strains of bacteria, each of the bacterial strains having been previously known and separately used, for the same purpose, unpatentable, stating:

The combination of species produces no new bacteria, no change in the six species of bacteria and no enlargement of the range of their utility. Each species had the same effect it always had. The bacteria perform in their natural way. Their use in combination does not improve in any way their natural functioning. They serve the ends nature originally provided and act quite independently of any effort of the patentee.<sup>18</sup>

Consistent with this test is the holding of this Court in *American Fruit Growers, Inc. v. Brogdex*, 283 U.S. 1 (1931), namely, that a naturally occurring object becomes a manufacture only when it is given "a new or distinctive form, quality, or property."<sup>19</sup>

17. 306 U.S. at 94.

18. 333 U.S. at 131.

19. 283 U.S. at 11.



This test, stated by this Court to point to the proper analysis in *Flook*, has been followed by other lower courts and was followed by the CCPA in this case.

In *Merck & Co., Inc. v. Olin Mathieson Chemical Corp.*, 253 F.2d 156 (4th Cir. 1958), the Fourth Circuit Court of Appeals made specific reference to the test set forth in *Funk Bros.*:

In dealing with such considerations, unpatentable products have been frequently characterized as "products of nature." See *Funk Brothers Seed Company v. Kalo Inoculant Company*, . . . (a composite culture of non-inhibitive strains of different but known, species of bacteria); [additional citations omitted]. But where the requirements of the Act are met, patents upon products of nature are granted and their validity sustained.<sup>20</sup>

Significantly, in upholding a patent to a vitamin B-12 active composition over a product-of-nature defense, the Fourth Circuit Court of Appeals held that:

The compositions of the patent here have all of the novelty and utility required by the Act for patentability. They never existed before; there was nothing comparable to them . . . The new products are not the same as the old, but new and useful compositions entitled to the protection of the patent.<sup>21</sup>

The court below fully appreciated and applied this test in reaching its carefully reasoned opinion, as is clear from Judge Baldwin's statement in his concurring opinion:

20. 253 U.S. at 162.

21. 253 F.2d at 164.

Although many of these decisions are far removed in time, and involve crude technologies when compared to those of Bergy and Chakrabarty, the opinions supporting these decisions voice a concern of the Supreme Court that a patentee not obtain an effective monopoly over that which is called, for the lack of a more precise term, "a principle or phenomenon of nature". The common thread throughout these cases is that claims which directly or indirectly preempt natural laws or phenomena are proscribed, whereas claims which merely utilize natural phenomena via explicitly recited manufactures, compositions of matter or processes to accomplish new and useful end results define statutory inventions.<sup>22</sup>

If, as this Court has stated, the *Mackay* and *Funk* approaches pointed to the proper analysis to be used in *Flook*, they present *a fortiori*, the proper analysis for respondent's invention. Respondent's new, man-made strain of a micro-organism having the new and useful end of simultaneously degrading several different components of crude oil is a novel and useful structure according to *Mackay*, which enlarges the range of utility according to *Funk*.

**D. The Plant Patent Statute of 1930 is an insufficient basis for determining Congressional intent in 1874.**

Petitioner contends that the Plant Patent Act of 1930<sup>23</sup> is a basis for the exclusion of the respondent's invention from §101. However, petitioner is mistaken in its

22. *Application of Bergy et al*, *supra*, 596 F.2d at 988.

23. 35 USC §161 *et seq.*

reliance on this basis for it has looked to the legislative history of the Plant Patent Act for evidence of the intent of a previous Congress, saying in effect that if Congress in 1930 passed an act extending patent protection to the plant breeders, then Congress in 1874 must not have intended that "manufactures" and "compositions of matter" in R.S. §4886 include any living organism. This ascribes to a preceding Congress an intent which the members of that Congress did not themselves state. As this Court has noted, "[T]he views of a subsequent Congress form a hazardous basis for inferring the intent of an earlier one." *United States v. Price*, 361 U.S. 304, 313 (1960).

The plant protection legislation was enacted not because the subject matter was "living" but rather because the statutory description requirements of the then-existing patent act were such that they could not be met by, and thus inhibited the promotion of, the useful art of plant breeding. A contemporaneous memorandum from the Commissioner of Patents to the Secretary of Commerce shows that it was this difficulty in providing a sufficient description of the to-be-patented plants, and not the fact that the plants were alive, which precluded their patenting under the then-current statute:

Further, and more important, there at once arises the difficulty of defining in a written document which must be printed, both as constituting part of the patent and as constituting a publication available for search and distribution, the differences which identify a new variety from previously known varieties.<sup>24</sup>

24. A Bill to Provide for Plant Patents: Hearings on H.R. 11372 before the Comm. on Patents 71st Cong., 2d Sess. 7 (1929-30) (statement of Hon. Fred S. Purnell).

The reaction of Congress was the relaxation of the description requirement as a means of constitutionally "promoting" the "useful art" of plant breeding. The bill, as passed, included the provision that "[n]o plant patent shall be declared invalid on the ground of non-compliance with this Section [§§4888-35 USC §33 (1930)] if the description is made as complete as is reasonably possible." Thus, the only operative phrase in the Plant Patent Act relevant here, 35 USC §162, as enacted, relates to description, not to "life".

**E. *In terrore* arguments of petitioner are misleading and beside the point.**

Petitioner has found it necessary in its brief to argue the "highly controversial"<sup>25</sup> nature of research in this area, involving as it does "recombinant DNA"<sup>26</sup> and "genetic engineering".<sup>27</sup> The controversy is urged, in part, by an exposition on the hazards involved in research in this area. Without question, the research is not free from hazard. Neither is research in a chemical laboratory, laser research, research into the structure of the atom or fission, or myriad other lines of research. But the degree of hazard connected with research in a particular area of technology, old or new, is not the standard. No authority is cited to the contrary. The Patent and Trademark Office well knows that its function is to *examine* inventions presented to it for compliance with the patent statutes, not to *regulate* hazardous research.

As evidence of the hazards involved, petitioner relies heavily on NIH Recombinant DNA "Guidelines", of 1976.<sup>28</sup>

25. Brief for Petitioner at 18.

26. *Id.* at 17.

27. *Id.* at 18.

28. *Id.* at 19.

These guidelines were considerably relaxed in 1979 by the National Institutes of Health which reportedly currently fund over 700 scientific projects in this area, involving over 90 million dollars.

Another point made by petitioner on the subject of "controversy" raises the specter of slavery, and questions whether such life can be "owned"<sup>29</sup> by patent holders. Fortunately, the specter is quickly laid to rest by reference to the Thirteenth Amendment.<sup>30</sup> Granted, patent rights are personal property rights. However, there is no justification under our laws known to *amicus* for a distinction between property rights in living things as opposed to non-living things. Valid property rights in living entities have been recognized as long as humans have existed, from the domesticated goat and plots of Indian corn to today's vast herds of sheep, cattle and pigs and vast fields of wheat. Consider, too, the prize bull whose owner, by virtue of a "monopoly" and current technology, earns a good profit while at the same time providing a dairy farmer with an opportunity to improve his herd. Also consider the syndication of race horses. These are all examples of valid property rights held by citizens of this country in living entities. One must ask why the Patent and Trademark Office, through the office of Solicitor General, seeks to have patent rights in living things set apart as some special breed of property right. Petitioner's brief provides no support for this position.

29. *Id.* at 20.

30. U.S. CONST. amend. XIII, §1.

Still another argument is made based on the "confining monopoly"<sup>31</sup> theory. If understood correctly, petitioner's argument here seems to say that strict construction of 35 USC §101 is required on the characterization of a patent as a monopoly. One consequence of this argument would be that patents would be granted only for advances in areas of existing technology, a result clearly at variance with the expressed aims of the Constitution—"To promote the Progress of . . . useful Arts."<sup>32</sup>

More disturbing is the need for petitioner to defend its position in this case by invoking "this Nation's historical antipathy to monopoly,"<sup>33</sup> which suggests an antagonism to our patent system as a whole, rather than recognizing this nation's historical, and Constitutionally recognized, commitment to the promotion of progress through the grant of patents.

Two additional arguments made by petitioner on the commonly perceived scope of the present patent statutes require comment. The first is to the effect that various bar associations and their committees have proposed legislation over recent years "so that various living things, including microorganisms, might at last be patented."<sup>34</sup> *Amicus* merely observes that to the extent that this showing can be relied on, it must be considered as a reaction by the organized bar to the rejections of patent claims under the then current practices of the Patent and Trademark Office.

31. Brief for Petitioner at 12.

32. U.S. CONST. art. I, §8, cl. 8.

33. Brief for Petitioner at 12.

34. *Id.* at 14.



When faced with such action by a government bureau, the public has two choices, one is to seek redress from the courts and the other is to seek corrective legislation. The choices are not mutually exclusive. As this Court is well aware, even if it devoted its full time to hearing cases where the government takes a different view of the law than a private citizen, it could hear and decide only a small fraction of the disputes. What the petitioner attempts to rely on can be promptly dismissed as the pragmatic efforts of the organized bar, through Congress, to correct an extreme misinterpretation of §101 by the Patent and Trademark Office, and nothing more.

It should also be noted that much of the substance of the various bar association activities footnoted by petitioner relates to the desirability of relaxing for agricultural arts the standards set by §112. 35 USC §112 sets forth rather strict standards which must be met by an inventor when describing his invention.

Petitioner urges that Congress did not intend to include living things themselves within the scope of the general patent laws. But note claim 30 of petitioner's application, already allowed by the Patent and Trademark Office, which is clearly directed to the "living thing itself," albeit in combination with a carrier such as straw able to float on water and absorb oil. The bacteria is no less living because it is associated with the carrier, and in fact must be living in order to function in the manner intended by the invention. Further, as pointed out by the court below, the Patent and Trademark Office has construed the term "manufacture" in the statute to include yeast at least as early as 1873 in a

patent granted to Louis Pasteur. Other typical patents listed by the court, significantly granted in the period subsequent to 1930 include bacteria, mushroom mycellia, plant seeds, eggs, and eggs plus bacteriophages.

In its brief, petitioner attempts to blunt this argument by characterizing the long line of patents to living things as "aberrant." First, neither the parties nor *amici* attempted to collect all patents of this nature, and the court below listed only a few typical examples. More to the point, there is no evidence whatever to establish that such patent grants were aberrant or that petitioner was in any way aberrant in granting the patents. This record more reasonably can be interpreted to the effect that patents to a variety of living things were issued as a matter of course until, for reasons not appearing in the record (but wondered about in the opinion of the court below), the policy of the Patent and Trademark Office abruptly changed. As noted by Chief Judge Markey in his concurring opinion in the first *Chakrabarty* decision:

[I]f our patent laws are to achieve their objective, extra-legal efforts to restrict wholly new technologies to the technological parameters of the past must be eschewed. Administrative difficulties, in finding and training Patent and Trademark Office examiners in new technologies, should not frustrate the constitutional and statutory intent of encouraging invention disclosures, whether those disclosures be in familiar arts or in areas on the forefront of science and technology.<sup>35</sup>

*Amicus* submits that 35 USC §101 in its present form is adequate fully to include new areas of technology as they

35. *Application of Chakrabarty*, 571 F.2d 40, 44 (C.C.P.A. 1978).



develop. It has served well in this capacity in the past, and this Court is urged to continue its effectiveness by affirming the holding of the court below.

### Conclusion

For the reasons stated hereinabove, the judgment of the Court of Customs and Patent Appeals below serves the public interest and adheres to the established principles of statutory construction, and therefore, should be affirmed.

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